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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,193	06/27/2003	Lev Ryzhikov	1857.0910001	5795
26111	7590	04/14/2006	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			PRITCHETT, JOSHUA L	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/607,193

Applicant(s)

RYZHIKOV ET AL.

Examiner

Joshua L. Pritchett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-26 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-26 and 28-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This action is in response to Request for Continued Examination and Amendment filed March 28, 2006. Claims 18 and 31 have been amended as requested by the applicant.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 19, 21-26 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz (WO 98/28644) in view of Ueda (US 5,134,522). For text citations patent Schultz (US 6,366,410), which is a national stage of the PCT that WO 98/28644, is used as a translation while the WIPO document is being translated.

Regarding claims 18 and 29-31, Schultz teaches a pattern generator of a lithography system (col. 1 lines 8-10) having a first lens group (100) consisting of three lenses (Fig. 1) that decrease the numerical aperture of a received beam (Fig. 1); a second lens group (200) having at least one lens (Fig. 1) that receives the beam of radiation from the first lens group and controls characteristics of the beam of radiation at a pupil plane (claim 26). Claim 26 states that the

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intermediate portion (200) has an optical power. Lens elements with optical power are used to correct aberrations in the image pattern. Schultz further teaches a third lens group (300) that receives the beam of radiation from the second lens group and controls field characteristics of the beam of radiation at a patterning device plane (Fig. 1). Fig. 1 shows that the third lens group of Schultz controls the size of the pattern on the plane (19) based on the focal length of the third lens group. Schultz teaches an aperture stop (8) positioned between the first and second lens groups (Fig. 1; col. 2 line 67) and a fold mirror (14) positioned between the second and third lens groups (Figs. 1 and 2; col. 3 lines 7-8). Schultz lacks specific reference to the third lens group containing only one lens. Ueda teaches the use of a third lens group containing a single lens (Fig. 1) that corrects the field characteristics of the beam (col. 3 lines 45-47). Ueda further teaches the single lens element having one aspherical and one spherical surface (col. 3 lines 45-47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Schultz invention include the lens as taught by Ueda for the purpose of reducing the size of the system by having a single lens perform the function of field corrections, thus reducing the space occupied by the third lens group.

Regarding claim 19, Schultz teaches the second lens group consists of two lenses (Fig. 1).

Regarding claim 21, Schultz teaches one of the lenses in the first lens group is a meniscus lens (Fig. 1).

Regarding claim 22, Schultz teaches two of the three lenses in the first lens group of biconvex lenses (Fig. 1).

Regarding claim 23, Schultz teaches one of the two biconvex lenses has an aspherical surface (col. 3 lines 3-5).

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Regarding claim 24, Schultz teaches at least one lens in the second lens group has an aspherical surface (col. 3 lines 3-5).

Regarding claim 25, Schultz teaches at least one lens in the second lens group has at least one convex surface (Fig. 1).

Regarding claim 26, Schultz teaches the single lens in the third lens group comprises two spherical surfaces (col. 3 lines 3-5). Lenses in the art are assumed to be spherical unless otherwise indicated. There is no indication in the Schultz reference that either surface (15 or 16) are aspherical.

Regarding claim 28, Schultz teaches a light source (50) positioned before the first, second and third lens groups (Fig. 2); and a pattern generator (330) positioned after the third lens group (Fig. 2).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz (WO 98/28644) in view of Ueda (US 5,134,522) as applied to claim 18 above, further in view of Schultz (US 2002/0036832).

Schultz '644 in combination with Ueda teaches the invention as claimed but lacks reference to the use of three lenses in the second lens group. Schultz '832 teaches the use of a second lens group (705) with three lenses (Fig. 7). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Schultz '644 invention include three lenses in the second group as taught by Schultz '832 for the purpose of more precisely relaying the incident light to the pattern generator.

***Response to Arguments***

Applicant's arguments, see Amendment, filed March 28, 2006, with respect to the rejection(s) of claim(s) 18 and 31 under Schultz have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ueda. Applicant amended the claim language to require the third lens group consist of a single lens element. Schultz does not teach this limitation and the examiner interprets the limitation as not allowing a cemented lens arrangement. Ueda does teach the limitation of a third lens group with a single lens element.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *[initials]*

A handwritten signature in black ink, appearing to read "Drew A. Dunn", with a stylized flourish at the end.

**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**